Example with two types of workers that are very similar

Here is an example with two different types of workers, each paid the same, and an equal number of workers of each type.

\[ w_1 = 10; \quad w_2 = 10; \quad L_1 = 1,000; \quad L_2 = 1,000 \]

Total output produced = 5,000; price of output product = 4

total paid to type 1 workers = 10 \times 1,000 = 10,000

total paid to type 2 workers = 10 \times 1,000 = 10,000

total revenue = \( pZ = 4 \times 5,000 = w_1L_1 + w_2L_2 = 10,000 + 10,000 = 20,000 \)

\[
\text{share of revenue paid to type 1 workers} = \frac{10,000}{20,000} = 0.50
\]

\[
\text{share of revenue paid to type 2 workers} = \frac{10,000}{20,000} = 0.50
\]

partial productivity for type 1 workers = \( \frac{5,000}{1,000} = 5 \)

partial productivity for type 2 workers = \( \frac{5,000}{1,000} = 5 \)

real wage for type 1 workers = \( \frac{w_1}{p} = \frac{10}{4} = 2.50 = s_1 \left( \frac{Z}{L_1} \right) = 0.50 \times \frac{5,000}{1,000} \)

real wage for type 2 workers = \( \frac{w_2}{p} = \frac{10}{4} = 2.50 = s_2 \left( \frac{Z}{L_2} \right) = 0.50 \times \frac{5,000}{1,000} \)

For both types of workers, the real wage is equal to their wage divided by the price of the output product. Also, we can see that their real wage can be found by multiplying their share of revenue by their partial productivity. In this example, the two workers number the same and are paid the same, so the two shares, real wages, and partial productivities are all equal for the two groups. The two types of workers split the revenue evenly.

Example with two types of workers that are different

Here is another example with workers that are different. Type two workers are more highly paid, and there are fewer of them.
\[ w_1 = 10; \quad w_2 = 20; \quad L_1 = 1,000; \quad L_2 = 250 \]

Total output produced = 5,000; price of output product = 3

total paid to type 1 workers = 10 \times 1,000 = 10,000

total paid to type 2 workers = 20 \times 250 = 5,000

total revenue = pZ = 3 \times 5,000 = w_1 L_1 + w_2 L_2 = 10,000 + 5,000 = 15,000

\[ \text{share of revenue paid to type 1 workers} = \frac{10,000}{15,000} = 0.667 \]

\[ \text{share of revenue paid to type 2 workers} = \frac{5,000}{15,000} = 0.333 \]

\[ \text{partial productivity for type 1 workers} = \frac{5,000}{1,000} = 5 \]

\[ \text{partial productivity for type 2 workers} = \frac{5,000}{250} = 20 \]

real wage for type 1 workers = \[ \frac{w_1}{p} = \frac{10}{3} = 3.33 = s_1 \left( \frac{Z}{L_1} \right) = 0.67 \times \frac{5,000}{1,000} \]

real wage for type 2 workers = \[ \frac{w_2}{p} = \frac{20}{3} = 6.67 = s_2 \left( \frac{Z}{L_2} \right) = 0.33 \times \frac{5,000}{250} \]

As before, the real wages equal the revenue share for that type of worker multiplied by their partial productivity.\(^1\)

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\(^1\)The actual wages, and thus the revenue share, for each type of worker depends on supply and demand. If these workers are in high demand and short supply, the employer will have no choice but to pay them well to prevent them for taking other jobs. If these workers are in low demand and abundant supply, the employers will be able to get away with paying the workers less.